

CLAIMS

1. A telecommunications system which comprises an office network, an operator network, and a local area network between them, wherein the office network comprises
- 5 at least one mobile system terminal,
 a base transceiver station,
 a radio access gateway controlling the base transceiver station and
 having a functional connection with the local area network and configured to
 adapt the data transmission protocols of said mobile system and local area
10 network to each other,
- a serving support node which is configured to support the packet
 data protocol of said mobile system and to have a functional connection with
 said radio access gateway,
 a packet control unit which is configured to support the packet data
15 protocol of said mobile system and to have a functional connection with said
 radio access gateway and serving support node, and
 a gateway support node which is configured to support the packet
 data protocol of said mobile system and to have a functional connection with
 said radio access gateway, serving support node, and packet control unit, and
- 20 the operator network comprises adaptation functions for adapting
 data transmission from the office network through the local area network at
 least to the data transmission protocol according to said mobile system and
 used by the public land mobile network.
2. A telecommunications system as claimed in claim 1, wherein
25 said mobile station is configured to support the packet data protocol
 of said mobile system,
 and in response to a packet data connection request made by the
 mobile station, the serving support node and the gateway support node are
 configured to establish a packet data connection to a destination address
30 defined by the link request.
3. A telecommunications system as claimed in claim 2, further
 comprising
 a location database for registering the mobile stations belonging to
 the office network and for managing location and subscriber information,

- an adaptation function in the operator network for adapting a packet data connection from the office network through the local area network at least to the packet data protocol used by the public land mobile network,
- and in response to the packet data connection request made by the
- 5 mobile station, the office network is configured alternatively
- to establish a packet data connection to the destination address defined by the link request through the serving support node and gateway support node of the office network in response to the fact that said mobile station is registered to the office network, or
- 10 to route the packet data connection to the public land mobile network for onward routing to the destination address in response to the fact that said mobile station is not registered to the office network.
4. A telecommunications system as claimed in claim 1, wherein
said office-specific base transceiver station, radio access gateway,
- 15 serving support node, packet control unit, and gateway support node are implemented as one element of the telecommunications system.
5. A telecommunications system as claimed in claim 1, wherein
said radio access gateway, serving support node, packet control unit, and gateway support node are implemented as one element of the
- 20 telecommunications system in such a manner that the element is configured to control one or more office-specific base transceiver stations.
6. A telecommunications system as claimed in claim 1, wherein
a data transmission connection is configured from the gateway support node to a DHCP server for dynamically defining the IP addresses of
- 25 mobile stations.
7. A telecommunications system as claimed in claim 1, wherein
the adaptation functions of the operator network for adapting data transmission from the office network through the local area network to the data transmission protocol according to said mobile system comprise interfaces
- 30 according to said packet data protocol for establishing a packet data connection between at least the serving support node or gateway support node and an external data network.
8. A method for establishing a packet data connection in a telecommunications system which comprises an office network, an operator network, and a local area network between them, the office network comprising at least one mobile system terminal which is arranged to support a

packet data protocol, a base transceiver station, and a radio access gateway controlling the base transceiver station and adapted to have a functional connection with the local area network, a serving support node, a packet control unit, and a gateway support node, which are configured to support the packet data protocol of said mobile system and to have a functional connection with each other and with said radio access gateway, the method comprising

making a packet data connection request from the mobile station to said office network, and

10 establishing a packet data connection from the serving support node and gateway support node to a destination address defined by the link request,

adapting the data transmission protocols of said mobile system and local area network to each other in said radio access gateway, and

15 adapting the data transmission from the office network through the local area network to at least the data transmission protocol according to said mobile station and used by the public land mobile network in said operator network.

9. A method as claimed in claim 8, wherein the telecommunications
20 system also comprises a location database for registering the mobile stations belonging to the office network and for managing location and subscriber information, and an adaptation function in the operator network for adapting the packet data connection from the office network through the local area network to at least the packet data protocol used by the public land mobile network,

and in response to the packet data connection request made by the mobile station alternatively

30 establishing a packet data connection from the office network to the destination address defined by the link request through the serving support node and gateway support node of the office network in response to the fact that said mobile station is registered to the office network, or

routing the packet data connection to the public land mobile network for onward routing to the destination address in response to the fact that said mobile station is not registered to the office network.

35 10. A network element of a telecommunications system for supporting packet data connections in an office system which comprises at

least one mobile system terminal, a base transceiver station, and a radio access gateway controlling the base transceiver station and adapted to have a functional connection with the local area network and configured to adapt the data transmission protocols of said mobile system and local area network to
5 each other, wherein the network element comprises

a serving support node, a packet control unit, and a gateway support node, which are configured to support the packet data protocol of said mobile system and to have a functional connection with each other and with said radio access gateway.